

### **REMARKS**

Claims 33-38 are pending. By this Response, claims 33-38 are amended. Reconsideration and allowance based on the above amendments and following comments are respectfully requested.

#### **Double Patenting**

The Office Action rejects claims 33-38 on the ground of non-statutory obviousness-type double patenting in view of claims 1, 9, and 13 of Taira et al. (U.S. 6,731,910). In response, Applicants have submitted herewith Terminal Disclaimer to address the double patenting rejection. Accordingly, withdrawal of the rejection is respectfully requested.

#### **Background of the Invention**

In the field of mobile wireless communication such as the present invention, in a case where a repetition pattern is transmitted, a frequency selective fading caused by a multipath phenomenon affects the received power of a receiver. This generates or tends to generate large variations in the received power ("variation in the received power" is hereinafter referred to as "received power variation").

On the other hand, a random pattern is subject less to the frequency selective

Fading. Therefore, the random pattern results in smaller received power variations than a repetition pattern. Since the transmission data generally has a random pattern, the received power variation becomes small, as stated above.

A transmission object data includes a preamble containing information such as control information for transmission/reception, as well as the transmission data. When the transmission object data is transmitted, the preamble is transmitted before transmitting the transmission data. Conventionally, repetition data has been used for the preamble. Therefore, in the conventional

systems, the received power variation occurs in the preamble as stated above. However, in the embodiments of the present invention in which a random pattern is used, no or very little received power variation occurs in the transmission data. This results in the difference in the received power between the preamble and the transmission data.

The above difference in the received power disturbs the appropriate receiving operation. Particularly, the difference is more likely to occur under the wireless mobile communication environment including the complex multipath, such as the urban space where there are many buildings. As described in the specification on page 8 lines 10-17, i.e., a problem occurs in case where the receiver activates AGC for the preamble, "if the AGC output signal is settled down at the preamble portion ((1) in FIGS. 20A and 205), there is produced an improper output level at the in the data portion. The AGC output signal must be settled down again ((3) in FIGS. 20A and 20B) till the AGC output signal is approximate to the reference value. Thence, the demodulator continues its improper demodulation of the data ((2) in FIGS. 20A and 205) till the AGC output signal is settled down again."

Based on the above newly discovered problem, applicants utilize the random pattern to the signal pattern of the preamble, which reduces the received power variation at the preamble and also reduces the difference in the received power variation between the preamble and the transmission data. Accordingly, even though the signal subjected to the frequency selective fading is received, the AGC output is settled down into a proper signal level in the preamble and it is possible to adjust the signal level of the subsequent data portion (transmission data) to the reference value or its near value. See page 18, lines 7-12 of the specification.

### **Prior Art Rejection**

The Office Action rejects claims 33-38 under 35 U.S.C. §103(a) as being unpatentable over Qureshi et al. (U.S. 4,004,226) in view of Baldwin et al. (U.S. 5,204,976). This rejection is respectfully traversed.

In embodiments of the present invention as recited in claims 33-38, a preamble of a transmission data signal is used to provide power intensity information of the transmission signal. To provide an accurate power intensity with respect to the signal itself, a random pattern is used for the preamble.

Qureshi, contrary to the embodiments of the present invention, provides a system that trains an equalizer. A preamble is initially sent to the equalizer acting as a catalyst to jump start the training. The receiver detects the preamble which starts an initialization process prior to the training sequence. See col. 4, lines 10-17. Qureshi's invention relates to training of an equalizer in a wired communication system. Although Qureshi teaches that "each burst includes information preceded by a preamble..." in lines 2-3 of col. 3, this merely teaches a preamble in the general sense.

The preamble carries strong band-edge components that are used to make an initial determination of the best sampling epoch. The carrier recovery circuit also adjusts its frequency and phase. With this initialization, the remote-transmitter then changes to a pseudo-random pattern suitable for training the equalizer. See col. 4, lines 17-28.

Further, as stated at lines 51-59, a principal feature of the invention of Qureshi is the elimination of using the preamble for initialization. In this embodiment, the preamble is eliminated and training begins with a pseudo-random training sequence without the initial initialization offered by the preamble.

In each of the embodiments of Qureshi, the preamble is not random. The preamble acts to initialize prior to the pseudo-random training sequence. Further, the preamble is not used as a means to detect power intensity of the

signal. The preamble is merely used as an initialization tool prior to the actual training sequence used for an equalizer.

Further, Qureshi's teachings are not related to the same technical field as the embodiments of the present invention and thus one of ordinary skill would not look to these teachings, even if Qureshi did provide similar teachings and features to those of the present invention, which Qureshi does not as discussed above.

Thus, Qureshi fails to teach or suggest, *inter alia*, a preamble for detecting reception power intensity..., wherein a random pattern is used for the preamble as recited in claims 33-38.

Further, Baldwin fails to remedy the deficiencies of Qureshi. Baldwin is merely provided to teach a variation on the communication system of Qureshi. Applicants respectfully submit that Baldwin also fails to teach the above features absent in Qureshi. Baldwin's invention is directed to a wireless communication system. However, Baldwin's invention relates to a gain control when one or more terminal requests access to a base station. Baldwin discloses a random access channel for use in the access request, which includes a start sequence and a preamble (see column 2, lines 22-27 and Fig. 2). However, Baldwin does not teach or suggest the relationship between the preamble and the transmission data as discussed in the present invention.

Therefore, the combination of Qureshi and Baldwin fail to teach each and every feature of Applicants' claims 33-38 as required. Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

**CONCLUSION**

For at least these reasons, it is respectfully submitted that claims 33-38 are distinguishable over the cited art. Favorable consideration and prompt allowance are earnestly solicited.


In view of the above amendment, applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad J. Billings Reg. No. 48,917 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: March 12, 2007

Respectfully submitted,

By 

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